



Tool Products

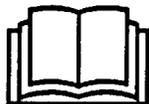
OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

SECTION	M35
MANUAL	36
Released:	4-1-91
Revised:	7-7-95
Form:	3803-2

1/2" CAPACITY IMPACT WRENCH

Models: WG047A-D1-()



⚠ WARNING

READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

Pneumatic tools should always be installed and used in accordance with A.N.S.I. B186.1 "Safety Code For Portable Air Tools."

⚠ WARNING

- Operate this tool at 90 p.s.i.g. (6.2 bar) maximum air pressure at the air inlet of the tool.
- Disconnect air supply from tool before removing/installing bit or socket or performing maintenance procedures.
- Keep hands, clothing and long hair away from rotating end of tool.
- Anticipate and be alert for sudden changes in motion during start up and operation of any power tool.
- Never exceed rated r.p.m. of tool.
- Wear suitable eye and hearing protection while operating tool.
- Tool shaft can continue to rotate briefly after throttle is released.
- Use only impact type sockets.
- Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel.
- Do not remove any labels. Replace any damaged label.
- Use only accessories recommended by ARO.

⚠ WARNING

Repeated prolonged operator exposure to vibrations which may be generated in the use of certain hand-held tools may produce Raynaud's phenomenon, commonly referred to as Whitefinger disease. The phenomenon produces numbness and burning sensations in the hand and may cause circulation and nerve damage as well as tissue necrosis. Repetitive users of hand-held tools who experience vibrations should closely monitor duration of use and their physical condition.

NOTICE

- The use of other than genuine ARO replacement parts may result in safety hazards, decreased tool performance and increased maintenance and may invalidate all warranties.
- ARO is not responsible for customer modification of tools for applications on which ARO was not consulted.
- Tool maintenance and repair should be performed by authorized, trained, competent personnel. Consult your nearest ARO authorized servicer.
- It is the responsibility of the employer to place the information in this manual into the hands of the operator.

For parts and service information, contact your local ARO distributor, or the Customer Service Dept. of the Ingersoll-Rand Distribution Center, White House, TN at PH: (615) 672-0321, FAX: (615) 672-0801.

ARO Tool Products

Ingersoll-Rand Company

1725 U.S. No. 1 North • P.O. Box 8000 • Southern Pines, NC 28388-8000

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FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

⚠ WARNING



Wear eye protection when operating or performing maintenance on this tool.

⚠ WARNING



Wear hearing protection when operating this tool.

⚠ WARNING



Turn off air supply and disconnect air supply hose before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool.

⚠ WARNING



Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.

⚠ WARNING



Do not carry the tool by the hose.

⚠ WARNING



Do not use damaged, frayed or deteriorated air hoses and fittings.

⚠ WARNING



Do not overreach when operating this tool. Keep body stance balanced and firm.

⚠ WARNING



Operate at 90 p.s.i.g. (6.2 bar/620 kPa) maximum air pressure.

NOTICE

⚠ WARNING FOR PERSONAL PROTECTION

- Read the manual before operating the tool
- Always wear your eye protection
- Repetitive motions or positions to sustain may be harmful to your hands or arms
- Use only repair methods, parts and accessories
- Use maximum torque of 40 Nm
- Operate at 90 p.s.i.g. (6.2 bar)



PN 49769 LABEL (NON-EU MODELS) **PN 49883 LABEL (-EU MODELS)**

This label must appear on the tool at all times. If it is lost or damaged, a replacement label is available at no cost.

WARNING = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

CAUTION = Hazards or unsafe practices which could result in minor personal injury or product or property damage.

NOTICE = Important installation, operation or maintenance information.

ROUTINE LUBRICATION REQUIREMENTS

Lack of or an excessive amount of lubrication will affect the performance and life of this tool. Use only recommended lubricants at below time intervals:

- Work approximately 9 cc of ARO 33153 grease into the hammer mechanism. Coat the anvil (32, 35 or 41) lightly with grease around the bushing (44).
- Inject approximately 4 cc of grease into grease fitting (7).
- Apply approximately 3 cc of ARO 29665 spindle oil into the air inlet of the tool before starting the tool.

AIR SUPPLY REQUIREMENTS

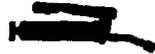
For maximum operating efficiency, the following air supply specifications should be maintained to this air tool:

- AIR PRESSURE – 90 p.s.i.g. (6.2 bar)
- AIR FILTRATION – 50 micron
- LUBRICATED AIR SUPPLY
- HOSE SIZE – 3/8" (10 mm) I.D.

An ARO® model C28231–810 air line FILTER/REGULATOR/LUBRICATOR (F.R.L.) is recommended to maintain the above air supply specifications.

RECOMMENDED LUBRICANTS

After disassembly is complete, all parts, except sealed or shielded bearings, should be washed with solvent. To relubricate parts, or for routine lubrication, use the following recommended lubricants:



Where Used	ARO Part #	Description
Air Motor	29665	1 qt. Spindle Oil
"O" Rings & Lip Seals	36460	4 oz. Stringy Lubricant
Gears and Bearings	33153	5 lb. "EP" – NLGI #1 Grease

INSPECTION, MAINTENANCE AND INSTALLATION

Disconnect air supply from the tool or shut off air supply and exhaust (drain) line of compressed air before performing maintenance or service to the tool.

It is important that the tools be serviced and inspected at regular intervals for maintaining safe, trouble-free operation of the tool.

Be sure the tool is receiving adequate lubrication, as failure to lubricate can create hazardous operating conditions resulting from excessive wear.

Be sure that the air supply lines and connectors are of proper size to provide a sufficient quantity of air to the tool.

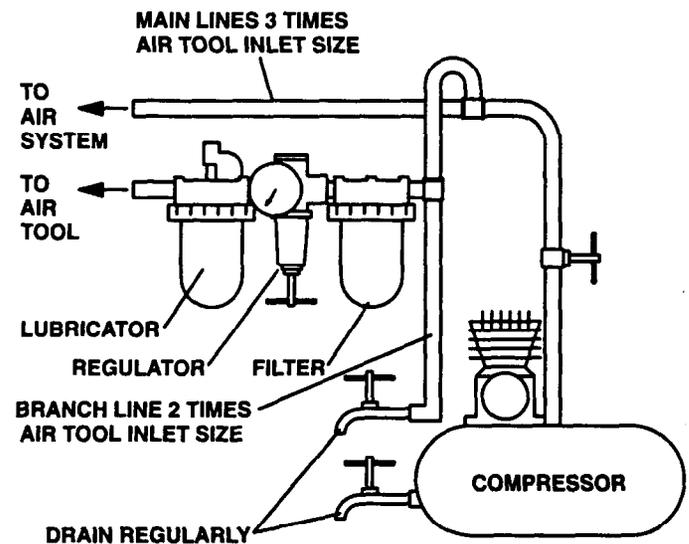
Tool maintenance and repair shall be performed by authorized, trained, competent personnel. Tools, hose and fittings shall be replaced if unsuitable for safe operation and responsibility should be assigned to be sure that all tools requiring guards or other safety devices shall be kept in legible condition. Maintenance and repair records should be maintained on all tools. Frequency of repair and the nature of the repairs can reveal unsafe application. Scheduled maintenance by competent authorized personnel should detect any mistreatment or abuse of the tool and worn parts. Corrective action should be taken before returning the tool for use.

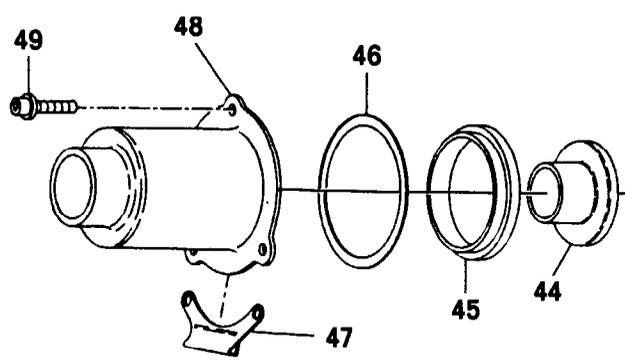
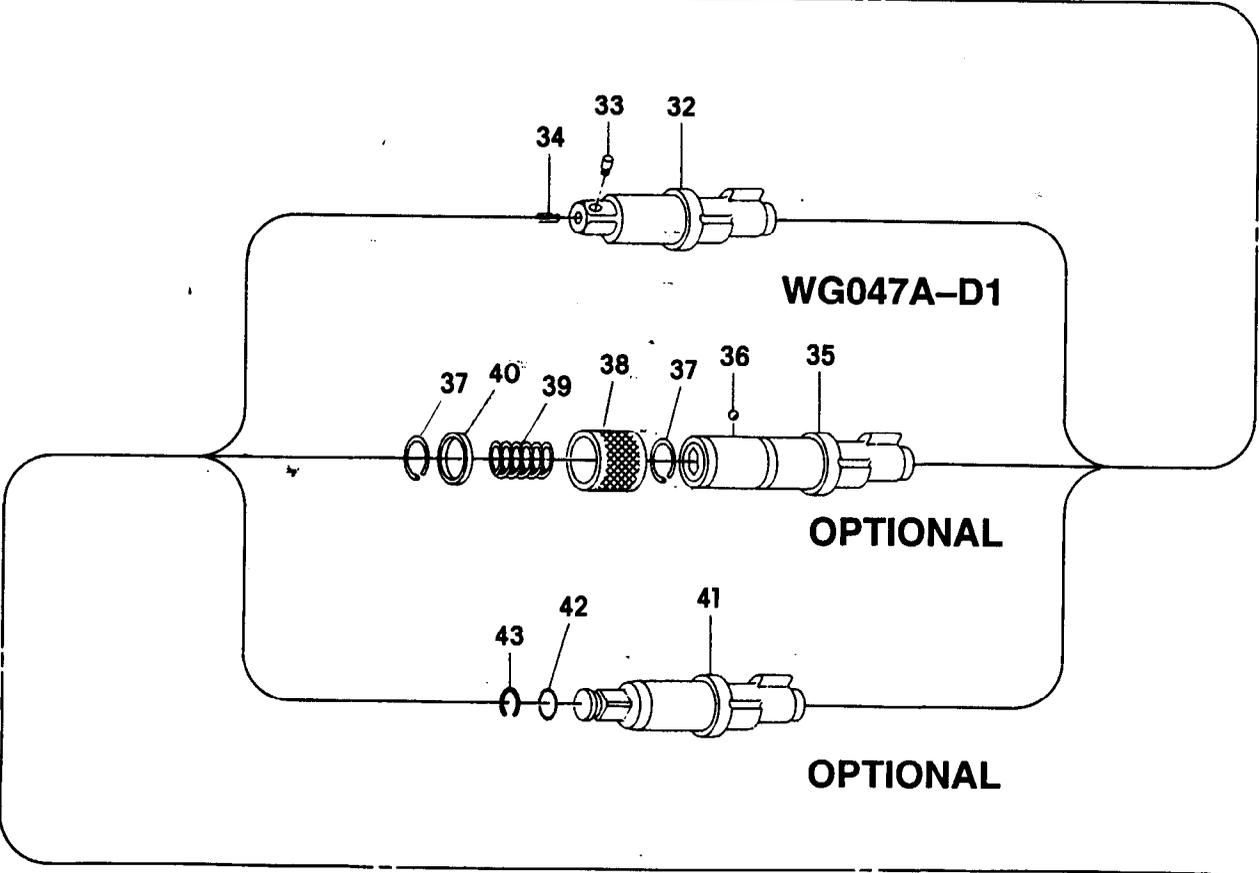
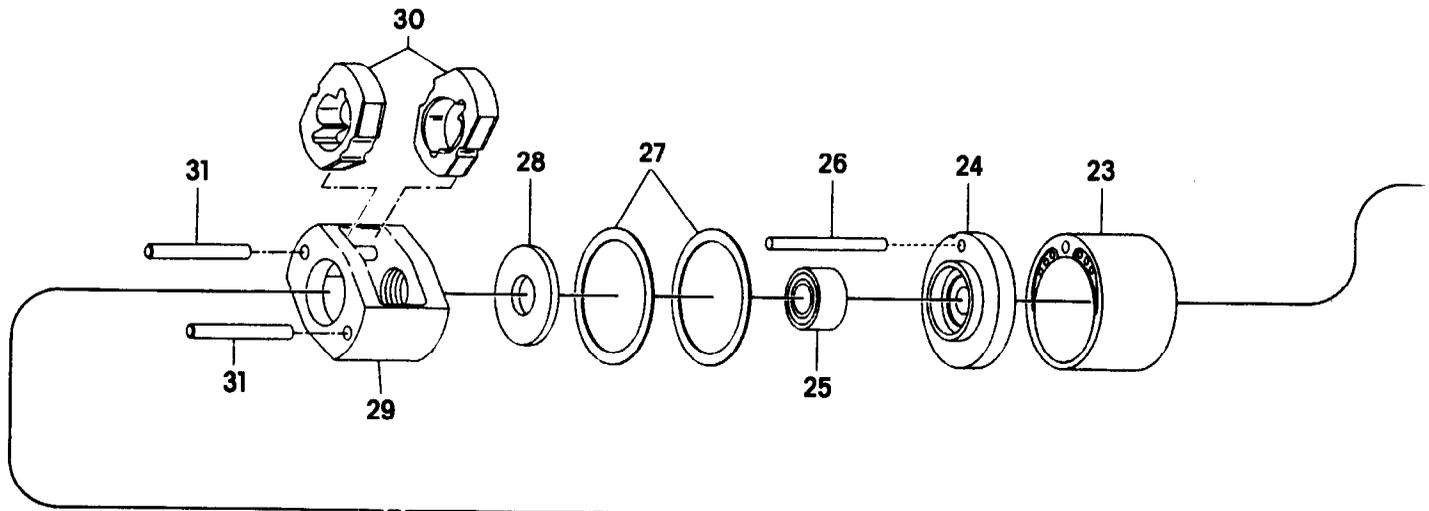
Disassembly should be done on a clean work bench with a clean cloth spread to prevent the loss of small parts. After disassembly is completed, all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination. Double sealed or shielded bearings should never be placed in solvent unless a good method of re-lubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry.

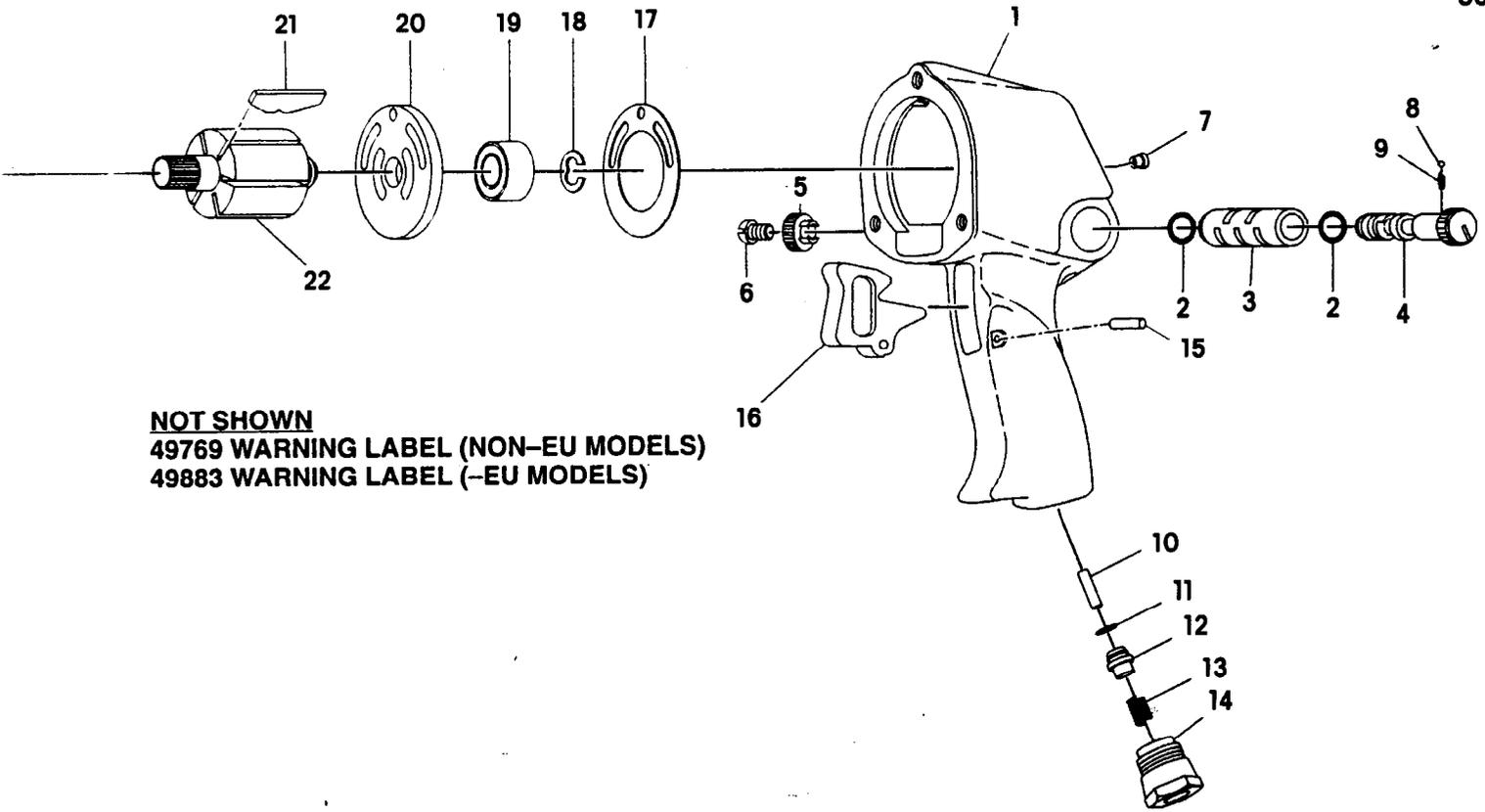
Upon reassembling, lubricate parts where required. Use 33153 grease, or equivalent, in bearings. Use 36460 lubricant for "O" ring assembly. When assembling "O" rings or parts adjacent "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually hold steel balls and other small parts in place while assembling.

When replacement parts are necessary, consult drawing containing the part for identification.

Always use clean, dry air. Dust, corrosive fumes and/or excessive moisture can damage the motor of an air tool. An air line filter can greatly increase the life of an air tool. The filter removes rust, scale, moisture and other debris from the air lines. Low air pressure (less than 90 p.s.i.g.) reduces the speed of the air tool. High air pressure (more than 90 p.s.i.g.) raises performance beyond the rated capacity of the tool and could cause injury. Shown below is a typical piping arrangement.







NOT SHOWN
49769 WARNING LABEL (NON-EU MODELS)
49883 WARNING LABEL (-EU MODELS)

PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING

1	Motor Housing	48951-91	33	Retaining Pin for pin type anvil	48951-166
2	"O" Ring (2 req'd)	48951-187		for ball type anvil	48951-157
3	Bushing (includes item 2)	48951-85	34	Retaining Spring	48951-158
4	Reverse Valve	48951-76	35	Quick Change Anvil (optional)	48951-159
5	Reverse Valve Knob	48951-81	36	Ball	48951-116
6	Screw	48951-80	37	Retaining Ring (2 req'd)	48951-147
7	Grease Fitting	48951-1	38	Retaining Sleeve	48951-144
8	Ball	48951-177	39	Spring	48951-145
9	Spring	48951-79	40	Thrust Ring	48951-146
10	Valve Stem	48951-88		Quick Change Anvil Assembly (includes items 35 thru 40)	48951-161
11	"O" Ring	48951-139	41	1/2" Square Drive Anvil (optional)(includes items 42 and 43)	48951-173
12	Throttle Valve (includes item 11)	48951-138	42	"O" Ring	48951-197
13	Spring	48951-198	43	Retaining Ring	48951-77
14	Air Strainer	48951-136	44	Bushing	48951-160
15	Trigger Pin	48951-155	45	Pilot	48951-140
16	Trigger	48951-90	46	Gasket	48951-70
17	Gasket	48951-75	47	Exhaust Deflector	48951-87
18	Retaining Ring	48951-134	48	Hammer Case (includes items 44, 45 and 46)	48951-162
19	Bearing	48951-135	49	Cap Screw (3 req'd)	48951-95
20	Rear End Plate	48951-74		PARTS NOT SHOWN	
21	Rotor Blade (6 included)	48951-98		Nameplate	48955
22	Rotor	48951-89		for non "-EU" models	49966
23	Cylinder	48951-170		for "-EU" models	48951-94
24	Front End Plate	48951-73		Horizontal Hanger	48957-3
25	Bearing	48951-148		Side Label	48957-3
26	Cylinder Dowel	48951-72		Grease Gun (available at extra cost)	7464-1
27	Washer (2 req'd)	48951-68			
28	Washer	48951-83			
29	Hammer Frame (includes item 31)	48951-86			
30	Hammer (2 req'd)	48951-84			
31	Hammer Pin (2 req'd)	48951-82			
32	1/2" Square Drive Anvil (optional)(includes items 33 and 34)				
	pin type retainer (standard)	48951-97			
	ball type retainer (optional)	48951-96			

DISASSEMBLY/ASSEMBLY INSTRUCTIONS

- Never apply excessive pressure by a holding device which may cause distortion of a part.
- Apply pressure evenly to parts which have a press fit.
- Apply even pressure to the bearing race that will be press fitted to the mating part.
- Use correct tools and fixtures when servicing this tool.
- Don't damage "O" rings when servicing this tool.
- Use only genuine ARO replacement parts for this tool. When ordering, specify part number, description, tool model number and serial number.

DISASSEMBLY

- Remove cap screws (49), releasing hammer case (48) from housing (1).
- Remove the impact mechanism from the hammer case and set it on the workbench, drive end up.
- NOTE: Hammers (30) are identical and are assembled to hammer frame in a certain relationship. Before removing hammers (30), using a black felt tip pen, mark the top hammer "T" and the bottom hammer "B". Mark both hammers on the same end.
- Slowly rotate the anvil (32, 35 or 41) clockwise until it comes up solid. DO NOT ROTATE FURTHER.
- Gently lift the anvil from the hammer frame without disturbing the hammers.
- Remove the two hammer pins (31), releasing the hammers (30).
- Remove the motor assembly from the housing.
- Grasp the cylinder in one hand and tap the drive end of rotor with a soft face hammer; motor will come apart.
- Remove retaining ring (18), releasing rear end plate (20) and bearing (19).
- Remove air strainer (14), releasing spring (13), throttle valve (12), "O" ring (11) and valve stem (10).
- Remove screw (6) and reverse valve knob (5), releasing reverse valve (4) and components.

ASSEMBLY

- Grease and assemble two "O" rings (2) to grooves in bushing (3).
- Coat reverse valve (4) with ARO 29665 spindle oil.
- Assemble spring (9) and ball (8) to reverse valve (4) and assemble reverse valve into bushing (3).

- Assemble knob (5) to reverse valve, securing with screw (6).
- Coat valve stem (10) with ARO 29665 spindle oil and assemble into housing.
- Assemble throttle valve (12), with "O" ring (11), and spring (13) into housing, securing with air strainer (14). NOTE: Tighten air strainer to 35 – 40 ft lbs.
- Assemble bearing (19) to rear end plate (20), pressing on outer race of bearing.
- Coat "cylinder" side of end plate (20) with ARO 29665 spindle oil and assemble to rotor, pressing on inner race of bearing.
- Secure with retaining ring (18).
- Coat six rotor blades (21) with ARO 29665 spindle oil and assemble to rotor slots.
- Coat i.d. of cylinder (23) with ARO 29665 spindle oil and assemble over rotor.
- Assemble bearing (25) to end plate (24), pressing on outer race of bearing.
- Coat "cylinder" side of end plate (24) with ARO 29665 spindle oil and assemble to rotor, pressing on inner race of bearing.
- Align the dowel holes in the end plates and the cylinder. Insert a guide rod (approximately 10" long) thru the dowel hole, allowing the rod to extend 3" – 4" thru the rear end plate.
- Assemble gasket (17) into motor housing, aligning holes in gasket with those in housing bore.
- Insert the guide rod in motor assembly into the dowel hole in the motor housing, and slide the motor assembly into the motor housing.
- Remove guide rod and replace with cylinder dowel (26).
- Install washers (27) into housing, with small diameter of washers against end plate.
- Assemble washer (28) onto rotor.
- Coat hammers (30) with ARO 33153 grease and assemble into hammer frame in the same location as when they were disassembled. NOTE: To utilize both impacting surfaces, assemble hammers (30) with half-round notches on opposite sides.
- Assemble hammer pins (31) to hammer frame (29).
- Swing the top hammer to its full extreme one way or the other until you can slide the anvil thru it. Swing the bottom hammer in the opposite direction from the top hammer and slide the anvil into the bottom hammer.
- Pilot (45) must be removed to replace gasket (46).
- Assemble hammer case (48) to housing, securing with cap screws (49). NOTE: Tighten screws to 60 – 70 in. lbs.



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